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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,504	12/03/2001	Mark Doyle	8489.0008	8517
21127	7590	03/03/2004	EXAMINER	
KUDIRKA & JOBSE, LLP ONE STATE STREET SUITE 800 BOSTON, MA 02109			HEITBRINK, JILL LYNNE	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/006,504

Applicant(s)

DOYLE ET AL.

Examiner

Jill L. Heitbrink

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 06/12/02.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

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***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The term "complementary" in claim 1, line 9 is a relative term which renders the claim indefinite. The term "complementary" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear which properties have to be complementary and how complementary the properties would have to be to determine patentability. Similarly, the term "complementary" is unclear in claim 3, line 3, claim 7, line 17, claim 8, line 3.
4. Claim 2 recites the limitation "the valve" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 2, 4, 5, 6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gellert (Pat. No. 4,521,179).

7. Gellert discloses an apparatus including a pin 16 with a bulbous protrusion 90 having a maximum diameter circumferential surface which fits in or mates with the complementary interior surface portion 86 of the channel leading to a mold cavity 34. The pin is drivable by the piston 44 so as to stop polymer fluid flow (Fig. 3, col. 4, lines 14-18) and to open the channel to enable polymer fluid flow (Fig. 2). The pin is slidable in an aperture (gate 32) having a diameter equal to or greater than the maximum diameter circumferential surface of the bulbous protrusion of the pin (Fig. 1). Gellert discloses a manifold 28 and a heated nozzle 10 communicating with the gate.

8. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nouel (Pat. No. 3,371,384).

9. Nouel discloses an apparatus for controlling the rate of flow of fluid material (col. 4, lines 15-18) through a flow channel having an exit aperture 3 to a mold cavity. The slidable pin has a bulbous protrusion 9 which fits in or mates with an interior surface portion of the channel (circular orifice 5). The valve is drivable through at least a first position (shown in Fig. 2) wherein polymer fluid flow is stopped when the maximum diameter circumferential surface of the bulbous protrusion mates with the complementary interior channel surface and a second downstream position (shown in Fig. 1) where polymer fluid flow is enabled between the curvilinear surface of the bulbous protrusion and an interior surface of the channel, and the valve is drivable

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through a third downstream position (shown in Fig. 3) where a terminal downstream end of the valve pin mates with a complementary exit aperture surface to stop fluid flow.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7, 10-15, 17, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouel (Pat. No. 3,371,384) taken together with German publication DE 29909535.

12. Nouel discloses that an increase of pressure within the nozzle due to back pressure from the filled mold can be used to signal the switch to close orifice 5 rather than using the contact 67. German publication DE 29909535 teaches the use of pressure sensors 2 sending signals to the control unit 12 to control the hydraulic operation of the needle valve 4. It would have been obvious to a person of ordinary skill in the art to use the pressure sensors and controller taught by the German publication in an updated version of Nouel since the valve pin in Nouel is design and made for a specific pressure difference of the bulbous portion wherein the use of sensors provide the advantage of changing the designed pressure difference simply without machining the valve pin.

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13. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nouel (Pat. No. 3,371,384) taken together with German publication DE 29909535 as applied to claim 7 above, and further in view of Gellert (Pat. No. 4,579,520).

14. Gellert (col. 4, lines 36-40) teaches the nozzle being expandable upon heating to a predetermined operating temperature and being mounted relative to a complementary surface surrounding the gate to seal the nozzle tip to the surface. Nouel does not disclose the heating of the nozzle. However, in the more modern injection molding machines wherein the nozzle is heated to improve the flow of material through the nozzle, it would have been combinable with the valve pin and bulbous protrusion of Nouel especially when using the pressure sensor to determine when to close the passage rather than relying on the material pressure force.

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nouel (Pat. No. 3,371,384) taken together with German publication DE 29909535 as applied to claim 7 above, and further in view of Gellert (Pat. No. 5,299,928).

16. Gellert (col. 3, lines 50-54) teaches the nozzle comprising an outer unitary piece 78 formed of a first material with substantially less heat conductive than the inner second material 76. Nouel does not disclose the heating of the nozzle. However, in the more modern injection molding machines wherein the nozzle is heated to improve the flow of material through the nozzle, it would have been combinable with the valve pin and bulbous protrusion of Nouel especially when using the pressure sensor to determine when to close the passage rather than relying on the material pressure force.

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### ***Double Patenting***

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 7-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 6,464,909 in view of Nouel (Pat. No. 3,371,384). Patent '909 claims the sensor and actuator for moving a valve pin. However, Patent '909 does not claim the specific pin shape. This pin shape is taught by Nouel and is used to adjust the flow into the mold cavities. It would have been obvious to a person of ordinary skill in the art to provide the valve pin of Nouel in combination with the control and sensed conditions claimed by Patent 6,464,909 so as to improve the quality of the molded products based on the sensed pressure.

This is a provisional obviousness-type double patenting rejection.

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19. Claims 7-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6-18 of copending Application No. 10/101,278 in view of Nouel (Pat. No. 3,371,384). Copending Application 10/101,278 claims the sensor, actuator, the valve pins and computer in combination with the seal surface between the nozzles and the surface surrounding the gate. However, copending Application No. 10/101,278 does not claim the specific pin shape. This pin shape is taught by Nouel and is used to adjust the flow into the mold cavities. It would have been obvious to a person of ordinary skill in the art to provide the valve pin of Nouel in combination with the control, sensed conditions and nozzle seal claimed by copending Application No. 10/101,278 so as to improve the quality of the molded products based on the sensed pressure.

This is a provisional obviousness-type double patenting rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill L. Heitbrink whose telephone number is 571-272-1199. The examiner can normally be reached on Monday - Friday 9:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jill L. Heitbrink  
Primary Examiner  
Art Unit 1732

jlh